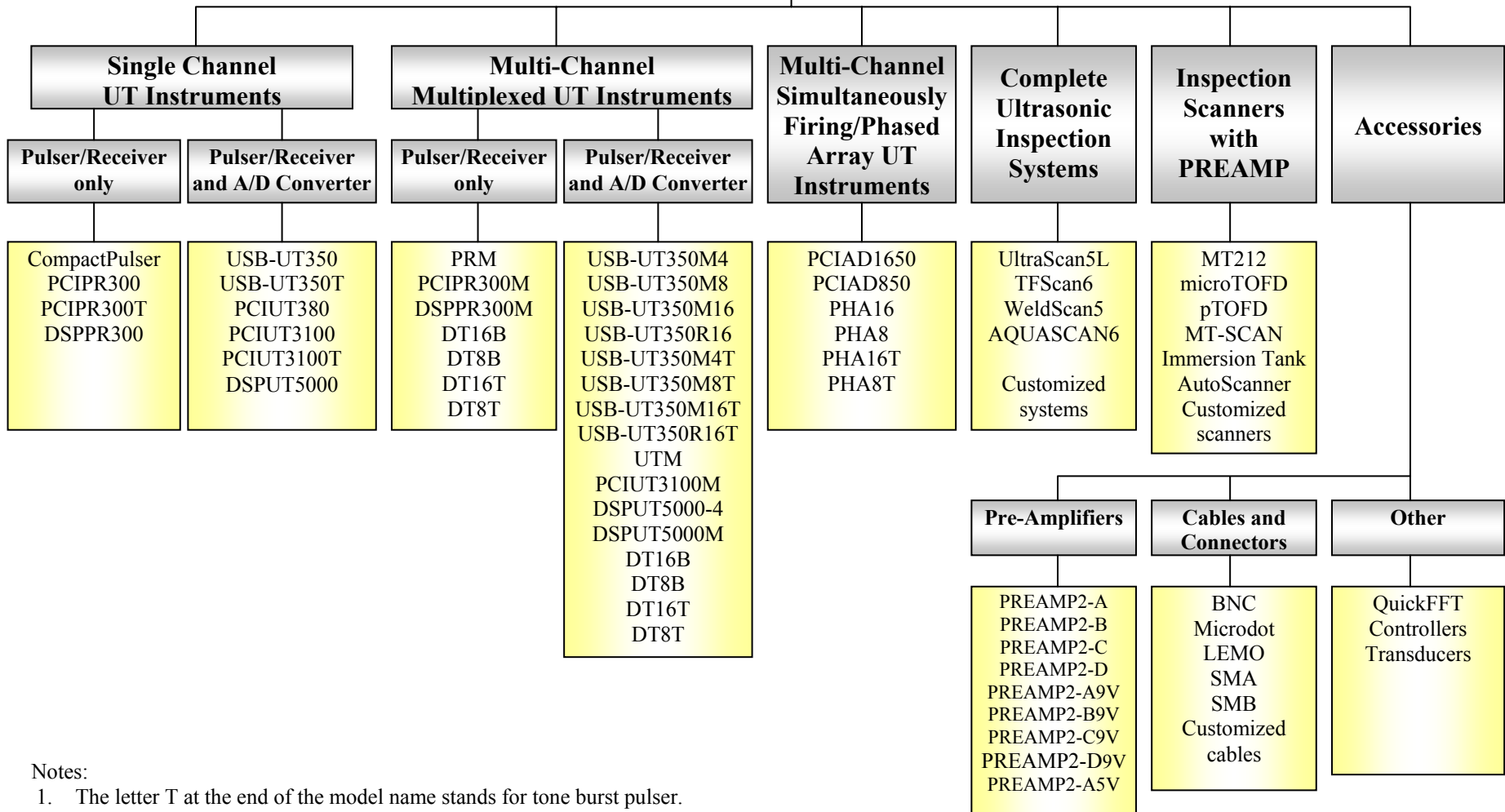


# US Ultratek Ultrasonic Testing Production Line



**Notes:**

1. The letter T at the end of the model name stands for tone burst pulser.
2. There is only one analog to digital converter in multiplexed multi-channel instrument. So only one channel can transmit and one channel can receive at a certain time.
3. There are 8 analog to digital converters in PCIAD850 and 16 analog to digital converters in PCIAD1650. All the channels can transmit and receive at the same time. Also each pulser can delay firing at the user defined time to make the instrument a phased array system.



# Ultrasonic Testing Instrument Selection Guide

Product Function	Compact Pulser <sup>1</sup>	PCIPR300 <sup>1</sup>	PCIPR300T <sup>1</sup>	PCIUT380 <sup>2</sup>	PCIUT3100 <sup>2</sup>	PCIUT3100T <sup>2</sup>	DSPUT5000 <sup>2</sup>	DSPPR300 <sup>1</sup>	USBUT350 <sup>2</sup>	USBUT350T <sup>2</sup>	UTM <sup>2</sup>	PRM <sup>1</sup>	PCIAD850 <sup>†</sup> PCIAD1650	PHA8T <sup>†</sup> PHA16T
Descriptions	Desktop & Remote Pulser/ Receiver	PCI bus Pulser/receiver board	Tone burst pulser/receiver board	PCI bus P/R and A/D board	PCI bus P/R and A/D board	Tone burst P/R and A/D board	PCI bus P/R and A/D board w/ DSP	PCI bus P/R board w/ DSP	USB P/R and A/D device	USB P/R and A/D device	4 channel P/R and A/D board	4 channel P/R board	Simultaneous A/D converter board	Phased array pulser board
Computer interface	RS232 serial port	PCI Bus	PCI Bus	PCI Bus	PCI Bus	PCI Bus	PCI Bus and RS232	PCI Bus and RS232	USB 2.0	USB 2.0	PCI Bus	PCI Bus	PCI Bus	PCI Bus
Operating systems supported by SDK	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 2000/XP	Windows 2000/XP	Windows 2000/XP	Windows 2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP	Windows 98/2000/XP
# of channels	1	1 or 256*	1 or 256*	1	1 or 256*	1 or 256*	1 or 256*	1 or 256*	1 to 16	1 to 16	4	4	8/16 to 128	8/16 to 128
Analog to digital conversion rate	No ADC	No ADC	No ADC	up to 80 MSPS	up to 100 MSPS	up to 50 MSPS	up to 100 MSPS	No ADC	up to 50 MSPS	up to 50 MSPS	up to 100 MSPS	No ADC	up to 50 MSPS per channel	
Data transfer rate to computer RAM				8 MBPS	8 MBPS	8 MBPS	80 MBPS		40 MBPS <sup>3</sup>	40 MBPS <sup>3</sup>	8 MBPS		80 MBPS	
On board memory				16k samples (256k optional)	16k samples (256k optional)	16k samples (256k optional)	800k samples		8k samples	8k samples	16k samples (256k optional)		800k samples	
Amplitude gain correction		√	√	√	√	√	√	√			√	√	√	
Transducer frequency range	1 to 50 MHz	1 to 10 MHz (25 MHz optional)	20kHz to 10MHz	1 to 10 MHz (15 MHz optional)	1 to 10 MHz (25 MHz optional)	20kHz to 10MHz	1 to 10 MHz (25 MHz optional)	1 to 10 MHz (25 MHz optional)	1 to 10 MHz	20kHz to 10MHz	1 to 10 MHz (25 MHz optional)	1 to 10 MHz (25 MHz optional)		20kHz to 10MHz
Pulse voltage	300V (350V optional)	300V (350V optional)	300V (350V optional)	300V (350V optional)	300V (350V optional)	300V (350V optional)	300V (600-900V optional)	300V (600-900V optional)	300V (350V optional)	300V (350V optional)	300V (350V optional)	300V (350V optional)		300V (350V optional)
Max. quadrature encoder counters		4	4	2	4	4	3	3	2	2	4	4	3	
External trigger option	√	√	√	√	√	√	√	√	√	√	√	√	√	
Sync out connector option	√	√	√	√	√	√	√	√	√	√	√	√	√	
TTL Digital I/O option		16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	16 inputs/outputs	
Additional 14-bit A/D converters		2	2	2	2	2	2	2	2	2	2	2		
2 micro second wide pulse option		√	√	√	√	√	√	√			√	√		√
Maximum PRF	5 kHz	5 kHz	5 kHz	5 kHz	5 kHz	5 kHz	5 kHz (20 kHz optional)	5 kHz (20 kHz optional)	1 kHz	1 kHz	5 kHz	5 kHz	5 kHz (20 kHz optional)	5 kHz (20 kHz optional)
Applications	Low cost stand alone pulser/receiver and high frequency remote pulser	These boards are used for medium speed applications, ultrasonic research and education purposes. The tone burst pulser can be used for EMAT, guide wave, and air coupled ultrasound. PCIUT380 is lowest cost UT board. Multi-channel tone burst pulser is also available.					These two boards are used for high speed applications such as production line inspection. The on-board DSP chip can process the data by itself.		Low cost UT device for laptop and desktop computers. The tone burst pulser can be used for EMAT, guide wave, and air coupled ultrasound.		Same as PCIUT3100 but with 4 channels on one board.	Same as PCIPR300 but with 4 channels on one board.	High speed applications including sound beam steering and focusing for conventional ultrasound and guide wave.	

1. These boards are pulser/receiver only. They can work with third party analog to digital converter boards or oscilloscopes to view the output signal. The letter T at the end of the model name stands for tone burst pulser.  
 2. These boards are all-in-one ultrasonic testing boards. Ultrasonic signal can be viewed and processed with free scope software or user's own software. The letter T at the end of the model name stands for tone burst pulser.  
 3. Although the burst data through put of USB communication is high, Windows limits 1,000 accesses to the USB port.  
 \* The number of channels can be expended up to 256 channels with DT16B, DT8B, DT16T, and DT8T multi-channel switching boards. The letter T at the end of the model name stands for tone burst pulser.  
 † PCIAD850/PCIAD1650 and PHA8T/PHA16T work together to form simultaneous A/D converter or a phased array system with tone burst pulsers up to 128 channels.